

ABSTRACT OF THE DISCLOSURE

Provided herein is a system architecture of semiconductor manufacturing equipment, wherein degas chamber(s) are integrated to the conventional pass-through chamber location. Also provided herein is a system/method for depositing Cu barrier and seed layers on a semiconductor wafer. This system comprises a front opening unified pod(s), a single wafer loadlock chamber(s), a degas chamber(s), a preclean chamber(s), a Ta or TaN process chamber(s), and a Cu process chamber(s). The degas chamber is integrated to a pass-through chamber. Such system may achieve system throughput higher than 100 wafers per hour.